



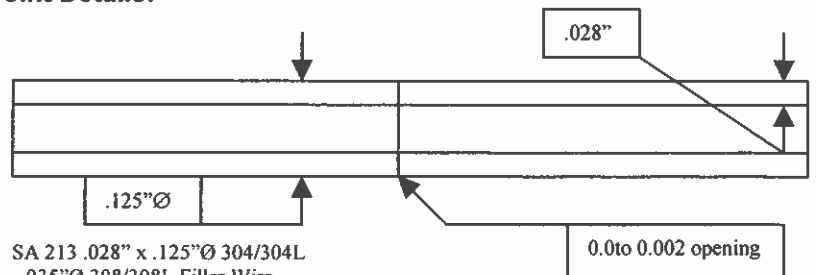
# Fermi National Accelerator Laboratory

Technical Division-Machine Shop

<b>Procedure Qualification Record</b>		<b>No. Fermi PQR SS-11-001</b>	<b>Date:</b> 10/20/2010
<b>Revision:</b>	<b>Date:</b>	<b>Remarks:</b>	
<b>Welding Process/Weld Type:</b> GTAW/Manual		<b>In accordance with:</b>	Fermi WPS SS-11-001

## Joints (QW-402)

## Details:

<b>Weld Type:</b>	Square Butt Groove	<b>Joint Details:</b>  SA 213 .028" x .125"Ø 304/304L .035"Ø 308/308L Filler Wire
<b>Backing:</b>	Argon Gas	
<b>Root Opening:</b>	None	
<b>Root Face:</b>	0.028"	

<b>Base Metals (QW-403)</b>		<b>Post Weld Heat Treatment (QW-407)</b>	
<b>Material Spec., Type or Grade:</b>		<b>Type:</b> No PWHT performed	
SA213, Type 304/304L	To SA213, Type 304/304L	<b>Temperature:</b> Not Used	
P8, Group I	to P8, Group I	<b>Time:</b> Not Used	
<b>Thickness of Coupon (in.)</b>	0.028"		
<b>Diameter of Test Coupon (in.)</b>	0.125"Ø		

<b>Filler Metals (QW-404)</b>		<b>Gas (QW-408) Percent Composition</b>		
<b>SFA Specification</b>	5.9	<b>Gas</b>	<b>Mixture%</b>	<b>Flow Rate</b>
<b>AWS Classification:</b>	304/304L	<b>Shielding</b> Argon	99.99%	1 CFH
<b>Filler Metal F-No.:</b>	6	<b>Trailing:</b> None		
<b>Weld Metal Analysis A-No.:</b>	8	<b>Backing:</b> Argon	99.99%	1 CFH
<b>Size of Filler Metal (in.):</b>	.035	<b>Other:</b> Maintain purge throughout welding		
<b>Weld Deposit "t"(in.):</b>	.028			
<b>Filler Metal Product Form:</b>	Solid/Bare			

<b>Positions (QW-405)</b>		<b>Electrical Characteristics (QW-409)</b>	
<b>Position of Joint:</b>	6G	<b>Current/Polarity:</b> DCEN	
<b>Weld Progression:</b>	Upward	<b>Amps:</b> 20	<b>Volts:</b> 10-12
<b>Other:</b>		<b>Tungsten Type &amp; Size:</b>	0.040"Ø
		<b>Other:</b> Non-Pulsing Current	

<b>Preheat (QW-406)</b>		<b>Technique (QW-410)</b>	
<b>Preheat Temperature:</b>	50 °F Minimum	<b>Travel (ipm):</b> As Required	<b>Oscillation:</b> None
<b>Interpass Temperature:</b>	350° F Maximum	<b>String/Weave Bead:</b>	Stringer
<b>Minimum Weld Temp.</b>	50°F	<b>Multiple/Single Pass (per side)</b>	Single
		<b>Multiple/Single Electrode:</b>	Single Electrode
		<b>Nozzle/Gas Cup Size:</b>	#6

Use of Fermilab Welding Procedures and Welder Qualifications for non-Fermilab work shall be at the sole risk and responsibility of the Subcontractor, and the Subcontractor shall indemnify and save Fermilab and the government harmless from any and all claims, demands, actions or causes of action, and for any expense or loss by reason of Subcontractor's and their employees possession and use of Fermilab procedures and qualifications.



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Technical Division-Machine Shop

**Procedure Qualification Record**

**No. Fermi PQR SS-11-001**

Date: 10/20/2010

Welding Process/Weld Type: GTAW/Manual

WPS No. Fermi WPS SS-11-001

## Tensile Test (QW-150)

Specimen No.	Dimensions	Area (Squared in.)	GL (in)	Ultimate Total Load (lbs.)	Ultimate Stress (PSI)	% E1	% RA	Comments
001	0.1250 x 0.690	0.0085	1.00	37,600	88,200	58.0	N/A	Base Metal

## Guided Bend Test (QW-160)

Figure Number & Type	Result	Figure Number Type	Result
QW-462.3 (a) Face Bend	Pass-No Visible Cracks	QW-462.3 (a) Root Bend	Pass-No Visible Cracks
QW-462.3 (a) Face Bend	Pass-No Visible Cracks	QW-462.3 (a) Root Bend	Pass-No Visible Cracks

Welder's Name : Daniel Watkins	ID : 03991N	Weld Stamp : W-24
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Visual Examination: Satisfactory	X-ray per ASME Section IX, QW-191.2
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Verification of Weld By: Michael Reynolds		Verification # 9102010-1-MR	9/10/2010
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Radiography Conducted By: Not Used	Date:
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Tests Conducted by: Exova Inc.	Ref. #T017736	Date: 10/20/2010
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We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

PQR prepared by: Fermi National Accelerator Laboratory

Authorized Representative

Roger Hiller

 00362N

Date: 10/20/2010

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